Serial Number: 10/739,882 Filing Date: December 18, 2003

Title: TOTAL SYNTHESIS OF DAURICHROMENIC ACID

IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A method for preparing a compound of formula (1)

$$\begin{array}{c|c} O & OH \\ \hline \\ Y & \hline \\ Z & CH_3 \end{array} \tag{1}$$

wherein R, X, Y, and Z are organic substituents that do not interfere with the condensation of (2) and (3), comprising (a) condensing a compound of formula (2):

wherein R' is a carboxylic acid protecting group, with a compound of formula (3):

Title: TOTAL SYNTHESIS OF DAURICHROMENIC ACID

in the presence of an effective amount of $CaCl_2$, $N[(C_2-C_4)alkyl]_3$ and $[(C_1-C_4)alkyl]OH$ and microwave irradiation to yield a compound of formula (4):

and (b) optionally removing protecting R' to yield a compound of formula (1).

- 2. The method of claim 1 wherein Y is (C_1-C_4) alkyl. (Original)
- The method of claim 2 wherein Y is methyl. 3. (Original)
- 4. (Original) The method of claims 1, 2 or 3 wherein X and/or Z are H.
- 5. (Currently Amended) The method of claim 1 wherein N[(C₂-C₄)alkyl]₃ is triethylamine NEt3.
- 6. (Currently Amended) The method of claim 5 wherein $[(C_1-C_4)alkyl]OH$ is ethanol EtOH.
- 7. The method of claims 1, 2, 3 or 4 wherein R' is 2-(trimethylsilyl)ethyl. (Original)
- 8. (Original) The method of claim 7 wherein R' is removed with TBAF.
- 9. (Original) The method of claims 1, 2 or 3 wherein R is C_3 - C_{22} alkyl optionally comprising 1-3 double bonds.

- 10. (Original) The method of claim 9 wherein R is a terpene.
- 11. (Original) The method of claims 1, 2 or 3 wherein X is H, further comprising irradiating the compound of formula 1, wherein R is -CH₂CH₂CH=C(CH₃)R², wherein R² is the remainder of organic group R, to yield a compound of formula (6):

$$R^2$$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

- 12. (Original) The method of claim 11 wherein R² is -CH₂CH₂CH=C(Me)₂.
- 13. (Original) The method of claim 11 wherein Y is CH₃ and Z is H.
- 14. (Currently Amended) A method for preparing daurichromenic acid (1a), comprising (a) reacting 2-methyl-4,5-dihydroxybenzoic 2-methyl-4,6-dihydroxybenzoic acid having a carboxy-protecting group with a compound of the formula (3a):

Page 8 Dkt: 875.080US1

in the presence of an effective amount of CaCl₂-2H₂O, NEt₃ and microwave irradiation to yield a compound of the formula (4a):

wherein B is a carboxy-protecting group, and (b) removing B to yield daurichromenic acid.

- 15. (Original) The method of claim 14 wherein B is 2-TMS(ethyl) or (C₁-C₄)alkyl.
- 16. (Original) The method of claims 14 or 15 wherein daurichromenic acid (1a) is converted into rhododaurichromenic acid A (5a) and rhododaurichromenic acid B (6a) by irradiation.

17. (Cancelled)

- 18. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of a compound of formula 1, 1a, 4, 4a, 5a, 6 or 6a in combination with a pharmaceutically-acceptable carrier or vehicle.
- 19. (Original) A dyestuff comprising an effective amount of a compound of formula 1, 1a, 4, 4a, 5a, 6 or 6a.
- 20. (Original) An antibacterial or herbicidal composition comprising an effective amount of a compound of formula 1, 1a, 4, 4a, 5a, 6 or 6a.
- 21. (Previously Presented) The method of claim 4 wherein R' is 2-(trimethylsilyl)ethyl.
- 22. (Previously Presented) The method of claim 21 wherein R' is removed with TBAF.
- 23. (Previously Presented) A method of treating HIV infection or AIDS in a mammal in need of such treatment comprising administering an effective amount of a compound of formula 1, 1a, 4, 4a, 5a, 6 or 6a to said mammal.

24. (New) A method for preparing a compound of formula (1)

$$HO$$
 Z
 CH_3
 (1)

comprising:

(a) condensing a compound of formula (2):

wherein R' is a carboxylic acid protecting group, with a compound of formula (3):

in the presence of an effective amount of $CaCl_2$, $N[(C_2-C_4)alkyl]_3$ and $[(C_1-C_4)alkyl]OH$ and microwave irradiation to yield a compound of formula (4):

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/739,882

Filing Date: December 18, 2003

Title: TOTAL SYNTHESIS OF DAURICHROMENIC ACID

Page 11 Dkt: 875.080US1

wherein R, X, Y, and Z each independently comprise a moiety selected from hydrogen; C_1 - C_{27} alkyl optionally straight chain or branched, optionally comprising about 1 to about 4 double bonds; aryl, optionally substituted with about 1 to about 3 alkyl, alkoxy, halo, or $N(R_aR_b)$ wherein R_a and R_b are independently about C_1 to about C_6 -alkyl; about C_1 to about C_6 -alkoxy; heteroaryl; (about C_1 to about C_{30} alkyl)-aryl, wherein the alkyl chain is optionally straight chain or branched and may further comprise about 1 to about 4 double bonds and the aryl group is optionally substituted with about 1 to about 3 alkyl, alkoxy, halo, or $N(R_aR_b)$ wherein R_a and R_b are independently about C_1 to about C_6 -alkyl; (about C_1 to about C_{30} alkyl)-heteroaryl, wherein the alkyl chain is optionally straight chain or branched and may further comprise about 1 to about 4 double bonds; cyano; carboxyamido; alkoxycarbonyl; alkylcarbonyloxy; alkoxycarbonyloxy; or $N(R_aR_b)$ wherein R_a and R_b are independently H, (about H0 to about H1 to about H2 double bonds; cyano; carboxyamido; alkoxycarbonyl; alkylcarbonyloxy; alkoxycarbonyloxy; or H3 wherein H4 and H5 are independently H5, (about H6 about H9 carbonyloxy; or H1 to about H9 carbonyloxy; or H1 to about H9 carbonyloxy; or H1 to about H1 to about H1 to about H3 and H4 are independently H5.

and

- (b) optionally removing protecting R' to yield a compound of formula (1).
- 25. (New) The method of claim 24 wherein Y is (C_1-C_4) alkyl.
- 26. (New) The method of claim 24 wherein Y is methyl.
- 27. (New) The method of claims 24, 25, or 26 wherein X and/or Z are H.
- 28. (New) The method of claim 24 wherein $N[(C_2-C_4)alkyl]_3$ is triethylamine.

- 29. (New) The method of claim 28 wherein $[(C_1-C_4)alkyl]OH$ is ethanol.
- 30. (New) The method of claims 24, 25, 26, or 27 wherein R' is 2-(trimethylsilyl)ethyl.
- 31. (New) The method of claim 30 wherein R' is removed with TBAF.
- 32. (New) The method of claims 24, 25, or 26 wherein R is C_3 - C_{22} alkyl optionally comprising 1-3 double bonds.
- 33. (New) The method of claim 32 wherein R is a terpene.
- 34. (New) The method of claims 24, 25, or 26 wherein X is H, further comprising irradiating the compound of formula 1, wherein R is -CH₂CH₂CH=C(CH₃)R², wherein R² is the remainder of organic group R, to yield a compound of formula (6):

$$R^2$$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

- 35. (New) The method of claim 34 wherein R² is -CH₂CH₂CH=C(Me)₂.
- 36. (New) The method of claim 34 wherein Y is CH₃ and Z is H.